

Middle School Initiative

**PART I
COVER SHEET**

CAP 1 SEMESTER 2 WEEK 7

COURSE: Arnold Aerospace Education, Achievement 2

LESSON TITLE: Balloons, They Create Their Own Thermals

LENGTH OF LESSON: 50 Minutes

METHOD: Lecture - Performance

REFERENCE(S):

1. *Aerospace Dimensions*, Module 1, Chapter 3, 2000
2. Study Guide, 2000
3. Leader Guide, 2000
4. Resource Guide, 2000

AUDIO/VISUAL AIDS/HANDOUTS/ACTIVITY MATERIAL(S): As Needed

COGNITIVE OBJECTIVE: To learn how a balloon flies and how it is different from gliders and powered airplanes.

COGNITIVE SAMPLES OF BEHAVIOR: Upon completion of this chapter, the cadet should know:

1. The principle of buoyancy and how this relates to the flight of a balloon.
2. The components of a balloon and how each works in the flight profile.
3. The history of the balloon and why it's recognized as the first powered, manned flight.

AFFECTIVE OBJECTIVE: N/A

AFFECTIVE SAMPLES OF BEHAVIOR: N/A

Middle School Initiative**PART II
TEACHING PLAN****Introduction**

ATTENTION: Today, you will continue your Aerospace Education studies in *Aerospace Dimensions*, Module 1 with Chapter 3 - Balloons, They Create Their Own Thermals.

MOTIVATION: What does the principle of buoyancy have to do with balloons? Why are balloons recognized as the first powered, manned flight? Today, we will learn the answers to these questions and more.

OVERVIEW: During this period, you will learn what makes a balloon rise, the components of a balloon, how each component works in the flight profile, and why balloons are recognized in the history of flight.

Body

NOTE: The instructor should use the lesson plan in the Leader Guide, Pages 4-5. The cadets should use the Study Guide, Page 12.

Conclusion

SUMMARY: We have studied the material in *Aerospace Dimensions*, Module 1, Chapter 3.

REMOTIVATION: Now you understand the forces that allow a balloon to fly and the components of a balloon.

CLOSURE: Next week, we will continue our AE studies by doing more experiments. **Any questions? See you next week!**

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**PART III
LESSON REVIEW**

LESSON OBJECTIVE(S): Today, we learned:

1. The principle of buoyancy and how this relates to the flight of a balloon.
2. The components of a balloon and how each works in the flight profile.
3. The history of the balloon and why it's recognized as the first powered, manned flight.

LESSON QUESTIONS: Contained in *Aerospace Dimensions*, Module 1, Chapter 3.